

WHAT IS CLAIMED IS:

- Sub a* 1. An array of electrodes fabricated on an insulating substrate having a conductive pattern on a major surface thereof, comprising:
- plural electrodes fixed to said conductive pattern; and
- an insulating resin layer directly covering a remaining portion of said major surface of said insulating substrate and said plural electrodes except surfaces of said plural electrodes so as to anchor said plural electrodes to said insulating substrate.
2. The array of electrodes as set forth in claim 1, in which said plural electrodes are fixed to said conductive pattern by means of conductive paste.
- Sub a* 3. The array of electrodes as set forth in claim 2, in which said conductive paste is selected from the group consisting of silver paste, gold paste, copper paste and solder paste.
4. The array of electrodes as set forth in claim 1, said insulating resin layer has a meniscus configuration around each of said plural electrodes.
5. The array of electrodes as set forth in claim 4, in which said insulating resin layer is a thermosetting synthetic resin, and said meniscus configuration is formed during the thermosetting.
- Sub a* 6. The array of electrodes as set forth in claim 5, in which said insulating resin layer is selected from the group consisting of polyimide resin, epoxy resin, phenol resin, acrylic resin and silicone resin.
7. The array of electrodes as set forth in claim 1, in which said electrodes are solder balls.

8. The array of electrodes as set forth in claim 7, in which said solder balls are formed on conductive lands of said conductive pattern forming a part of an interposer.

9. The array of electrodes as set forth in claim 8, in which said conductive pattern is fixed to electrodes of a semiconductor chip.

10. The array of electrodes as set forth in claim 1, in which said plural electrodes are formed of a heat-fusible conductive material, and are directly fixed to said conductive pattern by means of pieces of said heat-fusible conductive material fused therefrom.

11. The array of electrodes as set forth in claim 10, in which said heat-fusible conductive material is solder.

12. A process for fabricating an array of electrodes on an insulating substrate, comprising the steps of:

a) preparing electrodes and an insulating substrate including a conductive pattern formed on a major surface thereof and having conductive lands where said electrodes are to be fixed;

b) applying conductive paste on said electrodes or said conductive lands;

c) fixing said electrodes to said conductive lands by means of said conductive paste; and

d) covering said insulating substrate and predetermined surfaces of said electrodes with an insulating resin layer so as to anchor said electrodes to said insulating substrate.

13. The process as set forth in claim 12, in which said conductive paste is selected from the group consisting of silver paste, gold paste, copper paste and solder paste.

14. The process as set forth in claim 12, in which said step d) includes the sub-steps of

d-1) spreading a thermosetting liquid resin over the insulating substrate, and

d-2) applying said thermosetting liquid resin with heat so as to form said insulating resin layer from said thermosetting liquid resin.

15. The process as set forth in claim 14, in which said step d) further includes the sub-step of d-0) covering remaining surfaces of said electrodes with repellent layers before said step d-1), and said repellent layers are removed from said electrodes after said step d).

16. The process as set forth in claim 12, in which said electrodes are inserted into through-holes of an insulating resin film in such a manner that lower portions of said electrodes project from said insulating resin film in said step a).

17. The process as set forth in claim 16, in which said step d) includes the sub-steps of

d-1) melting said insulating resin film so as to cover said insulating substrate and said predetermined surfaces of said electrodes with liquid resin formed therefrom, and

d-2) solidifying said liquid resin so as to cover said insulating substrate and predetermined surfaces of said electrodes with said insulating layer.

18. The process as set forth in claim 16, in which said through-holes are laid on the pattern of said electrodes.

19. A process for fabricating an array of electrodes on an insulating substrate, comprising the steps of:

a) preparing electrodes and an insulating substrate including a conductive pattern formed on a major surface thereof and having conductive lands where said electrodes are to be fixed;

b) making said electrodes on said conductive lands dipped in thermosetting liquid resin spread over said insulating substrate; and

c) heating the resultant structure of said step b) so as to fix said electrodes to said conductive lands and solidify said thermosetting liquid resin for anchoring said electrodes to said insulating substrate.

20. The process as set forth in claim 19, in which said electrodes are formed of heat-fusible conductive material, and

said step b) includes the sub-steps of

b-1) spreading said thermosetting liquid resin over said insulating substrate so as to cover said conductive pattern including said conductive island therewith,

b-2) bringing said electrodes into contact with said conductive lands, respectively, and

b-3) heating said thermosetting liquid resin and said electrodes of said heat-fusible conductive material with heat.

21. The process as set forth in claim 20, in which said step b) further includes the sub-step of b-4) putting said electrodes in positions on said conductive lands between said step b-2) and said step b-3).

22. The process as set forth in claim 21, in which said electrodes are put in said positions through applying supersonic vibrations.

23. The process as set forth in claim 19, further comprising the step of e) removing the solidified thermosetting resin from upper portions of said electrodes after said step d).

24. The process as set forth in claim 19, in which said electrodes are formed of heat-fusible conductive material, and

said step b) includes the sub-steps of

b-1) placing said electrodes of said heat-fusible conductive material in positions on said conductive lands, respectively,

b-2) spreading said thermosetting resin over the resultant structure of said step b-1), and

b-3) heating said thermosetting liquid resin and said electrodes of said heat-fusible conductive material with heat.

25. The process as set forth in claim 24, in which said step b) further includes the step of b-4) applying flux to surfaces of said electrodes before said step b-1).